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Utilization of Maternal Health Care among child-married Mothers in India: An empirical analysis using Unit Level Data

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ABSTRACT

The present study aims to investigate the various factors that are associated with the utilization of maternal health care services among child-married mothers in India, who have given live/still births during last three years preceding the survey. We have used Chi-square test to determine the difference in proportion and the binary logistic regression have been used to understand the net effect of the predictor variables on the utilization of maternity care among child married mothers in India. The District Level Household Survey (DLHS-4) data have been used to analyze the maternal health care of the three outcome variables, such as 'full antenatal care (ANC)', 'safe delivery' and 'postnatal care within 42 days of delivery. The several socio-economic and demographic factors that associated with maternal health care utilization among child married mothers in India. The findings of the study suggest that the utilization of full antenatal care depend on several factors such as educational attainment, household wealth, religion, parity and village Infrastructure quintile. The similar result has been found in case of safe-delivery and post-natal care. Our study also shows that the likelihood of having a safe delivery and postnatal check-up is higher among those mothers who had full antenatal care during pregnancy. To ensure the coverage of full antenatal care can reduce the maternal mortality among child-married mothers in India. In this study, we find that, the mass media messages and interpersonal communication have a significant impact on the level of maternal care utilization among child-married mothers. Therefore, the policy level intervention should focus on family planning programme, female education, higher age at marriage and collaboration with community health workers that can lead to maternal healthcare utilization among child married mothers in India.

1. Introduction

According to the "Prohibition of Indian child marriage act 2006", child marriage today is defined as one where the girls and boys who were married below the age of 18 and 21 respectively. It has been found that, around 16 million child married women give birth every year around the world and most of these births (about 95 percent) are concentrated in middle and low income countries (World Health Organization, 2012). Early Childbirth have some risk factors for the child married mothers and its associated with adverse health outcomes, such as high risk of premature delivery, delivery and postnatal complications, unsafe abortion and obstetric fistula etc (Christiansen, Gibbs & Chandra-Mouli, 2013). It has been observed that, complications of pregnancy and childbirth are the leading factor for death among the child-married mother (World Health Organization, 2014) and India is no exception in this regard. Despite a substantial improvement in maternal mortality in last two decades, the proportion of maternal deaths among the child married mother to total maternal deaths is still around 47 percent in India (World Health Organization, 2014).

Most maternal deaths are preventable if mothers receive essential healthcare before, during and after childbirth (*Save the Children, 2013*). Over past decades, the Government of India has implemented several policies and programs such as Child Survival and Safe Motherhood Programe (1992), Reproductive and Child Health (RCH) Program (1997), National Population Policy (2000) and National Urban Health Mission (2013–2017) to reduce the burden of maternal mortality and improve maternal health. As a result, the overall utilization of maternal health care services in India has improved over time, however, the level of uptake is still considered low among the child married mothers in India (Kumar, Singh & Rai. 2013).

The utilization of maternal healthcare among child married mothers depends on various socio-economic and service delivery environment, such as quality of care, distance to health facility, lack of transport, education, lack of autonomy and decision-making power in the household are the main responsible factors for associated with maternal health care among child married mother (*Edmonds, Paul & Sibley, 2012*).

This paper is divided into seven sections. The need and objectives of the study are spelled out in the following section. Section-3 of the paper discusses the data and methodology. Section-4 analyzes the differentials in the utilization of maternal healthcare services among child-married mothers and Section-5 attempts to estimate the determinants of maternity care (ante-natal, safe – delivery and post-natal care) among child married mothers. Section-6 analyzes discussion. Finally, Section-7 conclusion and policy implication.

2. Need and Objective of the study

2.1 Need of the study

In India, the population growth has outpaced the growth of essential public services such as sanitation, health care and housing etc. It creates poverty and difficulties in physical and social environment, which has an adverse effect on maternal health care among child-married mothers (Jejeebhoy, Shveta, Zavier & Kumar, 2009). In India, the adolescent girls have to face many social and health related challenges such as early marriage, unwanted and early age pregnancy, illegal and unsafe abortion that leads to disruption in school education and inadequate access to family planning (Banerjee, Pandey, Dutta, Sengupta, Mondal & Deb. 2009). The early childbearing has adverse micro and macro level impacts—i.e., it not only affects the health of the mother and her child but also has repercussions for the society as a whole (Mangiaterra, Pendse, McClure & Rosen. 2008). Table-1 shows the utilization of maternal health care across different age groups and it is found that it has been least among 13-17 year age group compared to older age groups in India.

Table 1 Maternal healthcare among married mothers of different age groups in India,

Health care utilization Indicators	13-17	18-24	25-35	35-49
Four or more antenatal care visits	54.9	66.4	70.5	69.9
IFA adequate for 100 days	52.1	56.9	60.9	62.8
Two or more TT injections	88.5	95.5	96.5	96.8
Full antenatal care (a)	35.9	42.2	46.5	42.2
Safe delivery (b)	84.5	94.5	96.5	92.8
Home delivery	37.6	33.5	27.6	29.6
Postnatal check-up within 48 hours	74.5	80.5	84.8	78.4
Postnatal check-up within 2 weeks	75.9	82.8	86.8	79.6
Postnatal check-up within 42 days	82.4	86.9	89.9	84.8

Notes: (a) A mother is considered to have received full antenatal care only when she had a minimum of three antenatal check-ups, two tetanus toxoid injections, and iron and folic acid tablets for 90 days or more during her pregnancy period. (b) A delivery either conducted in a medical institution or in home deliveries assisted by doctor/nurse/Lady Health Visitor (LHV)/Auxiliary Nurse Midwife (ANM)/other qualified health professionals

Source-own calculation from DLHS-4(2012-13) data

2.2 Objective

1. Explore the nature of maternal health care among child-married mother in India.
2. Identify the various determining factors that are associated with maternal health care utilization among child-married mother in India.
3. In this study, we have tried to investigate if any relationship exists between the village infrastructural development and utilization of maternal health care among child-married mother in India.
4. This study aims to provide some lessons to the policy makers, so that the utilization of the maternal health care service among the child-married mothers can be improved.

3. Data and Methodology

A. Data

In this study, we use DLHS-4 (2012-13) unit level data as our main data source. While performing this analysis we have used unit level household data, ever-married women data and village level data. We use DLHS-4 data as our main data source because this is the latest data and it gives reliable estimates of maternal and child health, family planning and other reproductive health indicators at the district level in India (International Institute for Population Sciences, 2010).In this paper, we have used 115570 child-married mothers for the uses of our analysis

B. Methodology

We have used both bivariate and multivariate analyses to identify factors that are associated with maternal healthcare utilization among child-married mothers in India. Chi-square test is used to determine the difference in proportions of the service utilization across selected socioeconomic and demographic characteristics. Binary logistic regression is applied to understand the net effect of predictor variables on the utilization of maternal health care services—full antenatal care, safe delivery and postnatal care. We have chosen logistic regression because the response variables in our study are of dichotomous (i.e., binary) nature. Only those predictor variables that are found significant in chi-square test are included in the final binary logistic regression model. The results of logistic regression are presented in the form of estimated odds-ratios and p-values.

Dependent variable

We have used 'full antenatal care', 'safe delivery' and 'postnatal care' as indicators of maternal healthcare utilization. As per the guidelines provided by World health Organisation an woman is considered to have received full antenatal care only when she has had at least three antenatal check-ups, two tetanus toxoid injections, and iron and folic acid tablets/syrup for 90 days or more during her pregnancy (World Health

Organization, 2006). A delivery conducted in either a medical institution or home deliveries assisted by a doctor/nurse/Lady Health Visitor (LHV) /Auxiliary NurseMidwife (ANM) /other qualified health professionals is considered a safe delivery in this study. A woman is considered to have received postnatal care if she had a postnatal check-up within 42 days after delivery (World Health Organization, 1998).

Independent variables

We have considered a various socio-economic and demographic variables, such as woman's education, husband's education, religion, and caste, exposure to mass media, economic status, employment, parity and region of residence. The education level of the woman (mother) and her husband is defined using the number of years of schooling. The variable has five categories: illiterate, primary, middle, Secondary, higher secondary and above. The type of work in which the mother was engaged in the last year from the date of interview is considered her employment. The variable has three categories—unemployed, professional/service/production worker, and agricultural worker/farmer/labour. The entire sample of mothers can be divided in four social groups namely 'Others'(General), Scheduled Castes (SCs), Scheduled Tribes (STs) and Other Backward Classes(OBCs).There are three categories for religion—Hindu, Muslim, and Other (includes Sikhism, Christianity, Buddhism, Jainism and other religions).These are the official categories used by the Government of India. Wealth index is generally used as a proxy for the economic status of the household. Here, we have calculated the wealth quintile through principle component analysis and divided them into five categories—poorest, poorer, middle, richer, and richest. The maternity care has been constructed on the basis of antenatal care and safe delivery care separately. Similarly, we have constructed a village infrastructure quintile through Principal Component analysis and divided the villages into three groups according to their infrastructure, Group-1 having the least infrastructure and Group-3 having the highest.

4. Results

4.1 Profile of the respondents

Table-2 represents the percentage distribution of child-married mother who have delivered their last child during last three years preceding the survey by selected background characteristics. About 16.16 percent child married mother had given birth before 17 years of age. Moreover, 27.87 percent of child-married mothers were illiterate and the majority of them were Hindu. Among social groups, 41.72 percent of mothers belonged to OBC. About 76.66 percent of mothers were unemployed and 34.09 percent were married to an illiterate husband. About7.33 percent of mothers reported no exposure to antenatal care messages while about 9.08 percent had no exposure to safe delivery care messages. The proportion of mothers belonging to the poorest and poorer wealth quintiles was about 36.14 percent and 32.97 percent, respectively. Similarly, for village infrastructure quintile, 48.23 percent and 12.59 percent mothers belonging to the least and highest infrastructure quintile respectively.

Table -2 Percentage distribution of child married mothers by background characteristics in India.

Background characteristics	Percentage
Religion	
Hindu	66.04
Muslim	26.50
Others	7.46
Caste	
SC	19.96
ST	9.04
OBC	41.72
General	29.28
Mothers Education	
Illiterate	27.87
Primary	22.96
Middle	22.35
Secondary	19.82
Higher secondary and above	7.00
Husband Education	
Illiterate	34.09
Primary	21.24
Middle	20.30
Secondary	17.35
Higher secondary and above	7.03
Women (mother) Occupation	
Unemployment	76.66
professional/service/production worker	8.79
Agriculture worker/ labour	14.55
Wealth Quintile	
Poorest	36.14
poor	32.97
Middle	17.07
Richer	9.20
Richest	4.62
Village Infrastructure Quintile	
Least	48.23
Middle	39.18
Highest	12.59
Parity (Number of children)	
1	78.83
2	18.75
3+	2.42
Age of the Mother	
13-17	16.16
18-19	83.84
Exposure to antenatal care messages	
No exposure	7.33
only mass media	9.47

only interpersonal communication	41.09
Both of the above	42.11
Exposure to safe delivery care messages	
No exposure	9.08
only through mass media	15.66
only through interpersonal communication	36.50
Both of the above	38.76
Full antenatal care	
No	81.02
Yes	18.98
Safe delivery	
No	70.49
Yes	29.51

Source-Author own calculation from DLHS-4(2012-13) data

4.2 Differentials in the utilization of maternal healthcare services

Table-3 represents bi-variate differentials to explore how utilization of maternity services varies across selected socioeconomic and demographic characteristics. Overall, 27.98 percent of child married mothers received full antenatal care, 75.49 percent utilized safe delivery care and 70.08 percent had a postnatal check-up. The coverage of full antenatal care is low among illiterate mothers (15.28 percent). Only about 53.86 percent of illiterate mothers reported a safe delivery while about 92.72 percent of those with higher secondary education have chosen to do the same. The proportion of illiterate mothers who received postnatal care within 42 days after the delivery was 51.61 percent. In contrast, the same proportion among the higher secondary educated mothers (with twelve or more years of schooling) was 83.80 percent. With the increase in husband's year of schooling, the maternal health care utilization of these services has also been higher among the child-married mothers. The coverage of full antenatal, safe delivery and postnatal care among women with higher secondary educated husbands (twelve or more years of schooling) was 35.52 percent, 86.42 percent and 78.77 percent, respectively. Moreover, only 70.73 percent Muslim child married mothers reported using safe delivery services compared to 76.22 percent among Hindus. Similarly, postnatal care is utilized more by mothers from "other" religious groups (73.60 percent), followed by Muslims (71.93 percent) and Hindus (69.15 percent). While the utilization of full antenatal care (23.41 percent), safe delivery (73.19 percent) is lower among STs, the postnatal care utilization was lower among SCs (64.29 percent). It is observed that, the household wealth increases with increases in the utilization of antenatal, safe deliveries and post-natal care among child marriage mothers in India. For examples, 9.58 percent of mothers who belong to the poorest wealth quintile reported having full antenatal care, while the same proportion was 34.72 percent among mothers belong to the richest wealth quintile. A similar pattern was observed for safe deliveries and post-natal care. Moreover, 22.72 and 64.18 percent of mothers working as agricultural labour/workers receive full antenatal and safe delivery care, respectively compared to 32.13 percent and 77.09 percent of mothers working as professional/service/production workers. About 31.90 percent of mothers who heard antenatal care messages through both mass media and interpersonal communication received full antenatal care. On the other hand, the corresponding figure for mothers with no mass media exposure was just 12.82 percent. Similarly, about 79.42 percent of mothers with mass media exposure reported using delivery care. Fewer child married mothers of parity two and above were able to receive full antenatal care (21.74 percent) and safe delivery (60.7 percent) compared to mothers of parity one.

Table 3 Distribution of maternal health care among child married mother in India.

Background characteristics of women age of marriage less than 18	Ante-natal care	Safe delivery	Postnatal care
Religion	(8.2)**	(20.2)***	(5.1)**
Hindu	28.28	76.22	69.15
Muslim	25.44	70.73	71.93
Others	33.97	84.91	73.60
Caste	(14.3)**	(8.3)*	(16.3)***
SC	30.29	75.50	64.29
ST	23.41	73.19	67.28
OBC	29.67	75.25	69.60
General	27.65	78.98	75.75
Mothers Education	(206.9)***	(349.1)***	(221.7)***
Illiterate	15.28	53.86	51.61
Primary	21.81	70.95	66.40
Middle	26.45	79.51	74.35
Secondary	31.83	83.39	76.85
Higher Secondary and above	43.92	92.72	83.80
Husband Education	(71.2)***	(169.6)***	(99.6)***
Illiterate	17.70	57.44	55.79

Primary	26.03	68.95	62.83
Middle	26.99	75.13	69.71
Secondary	25.88	75.17	70.48
Higher Secondary and above	35.52	86.42	78.77
Mothers Employment	(7.5)***	(21.7)***	(10.2)***
Unemployment	28.23	76.70	70.68
professional/service/production worker	32.13	77.09	73.75
Agriculture worker/labourer	22.72	64.18	62.32
Wealth Quintile	(86.8)***	(209.4)***	(169.3)***
Poorest	9.58	46.83	42.33
poor	19.77	55.82	52.70
Middle	21.96	67.83	63.11
Richer	29.37	77.45	70.04
Richest	34.72	86.79	82.47
Village Infrastructure Quintile	(77.8)***	(201.4)***	(147.6)***
Least	20.91	66.38	64.16
Middle	27.73	76.54	69.01
Highest	33.27	84.81	81.74
Parity (Number of children)	(22.4)***	(97.4)***	(38.6)***
1	29.90	79.73	73.01
2+	21.74	60.7	60.62
Exposure to antenatal care messages	(51.0)***		
No exposure	12.82		
only through mass media	31.84		
only through interpersonal communication	25.78		
Both	31.90		
Exposure to safe delivery care messages		(135.8)***	
No exposure		56.35	
only through mass media		79.42	
only through interpersonal communication		74.49	
Both		83.76	
Full antenatal care		(197.3)***	(198.7)***
No		69.37	63.69
Yes		95.92	91.49
Safe delivery			(969.1)***
No			30.13
Yes			86.74
India	27.98	75.49	70.08

Notes: Figure in parentheses is the Chi-square statistics; x^2 test applied for each variable. Level of significance: * p<0.10, ** p<0.05,*** p<0.01.

Source-Author own calculation from DLHS-4(2012-13) data

5. Econometric analysis of the Findings

5.1 Determinants of ante-natal care among child married mothers

Table-4 represents the results of binary logistic regression to show the determinants of utilization of full antenatal care among child married mothers in India. The woman's education, husband's education, religion, caste, wealth quintile, parity (number of children), Village Infrastructure Quintile and exposure to antenatal care messages have significant determinants on the utilization of antenatal care services among child-married mothers in India. The mothers with secondary

education are about two times (OR = 1.889) and mothers with higher secondary education are about more than two and half times (OR = 2.946) more likely to receive full antenatal care than the illiterate mothers. The child married mother with higher secondary educated husbands (OR=1.873) are more likely to utilize full antenatal care than mothers with illiterate husbands. The wealth of household is positively associated with the utilization of full antenatal care among child-married mothers in India. Mothers from richer and richest wealth quintiles are nearly four times (OR = 3.746, OR = 3.950) more likely to receive full antenatal care than mothers belonging to the poorest wealth quintile. Mothers with parity two or more are less likely to receive full antenatal care than mothers with parity one (OR=0.810). The child married mothers who have heard antenatal care messages from mass media or interpersonal communication with a health worker have two times more likely to receive full antenatal care than those who have had no exposure to mass media. Muslim mothers are less likely (OR = 0.831) to receive full antenatal care than their Hindu counterparts. On the other hand, the odds of receiving full antenatal care are higher among SCs (OR=1.641) than they are among STs.

Table 4 Determinants of full ante-natal, safe-delivery and post–natal care among child married mother in India

Background characteristics of child married women	Ante-natal care	Safe-delivery	Post –natal care
	Odds ratio	Odds ratio	Odds ratio
Religion			
Hindu	1.000	1.000	1.000
Muslim	0.831***	0.855***	1.645***
Others	1.435	1.320	1.219
Caste			
ST	1.000	1.000	1.000
SC	1.641***	0.821	0.940
OBC	1.272	0.978	0.989
General	1.311	1.190	1.116
Mothers Education			
Illiterate or no education	1.000	1.000	1.000
Primary	1.489	1.502**	1.380
Middle	1.635***	1.789***	1.441***
Secondary	1.889***	1.800***	1.490***
Higher Secondary and above	2.946***	2.349***	1.866***
Husband Education			
Illiterate or no education	1.000	1.000	1.000
Primary	1.550	1.240	0.920
Middle	1.649***	1.478***	1.184
Secondary	1.736	1.598**	1.293
Higher Secondary and above	1.873***	1.663***	1.381
Mothers Employment			
unemployment	1.000	1.000	1.000
professional/service/production worker	1.292	1.139	1.129
Agriculture worker/labourer	1.155	0.961	1.215
Wealth Quintile			
Poorest	1.000	1.000	1.000
poor	2.624	1.217	1.305
Middle	2.650***	1.777***	1.406
Richer	3.746***	2.237***	1.412
Richest	3.950***	2.947***	2.248***
Village Infrastructure Quintile			
Least	1.000	1.000	1.000
Middle	2.550***	1.689***	1.365
Highest	3.643***	2.395***	1.628***
Parity (Number of children)			
1	1.000	1.000	1.000

2	0.810***	0.609***	0.969
Exposure to antenatal care messages			
No exposure	1.000		
only through mass media	2.829***		
only through interpersonal communication	2.383***		
Both	2.651***		
Full Antenatal care			
No		1.000	1.000
Yes		2.923***	1.900***
Safe delivery			
No			1.000
Yes			11.066***
Exposure to safe-delivery messages			
No exposure		1.000	
only through mass media		2.152***	
only through interpersonal communication		2.315***	
Both		2.617***	

Source- Author own calculation from DLHS-4 data

5.2 Determinants of safe-delivery care among child married mothers

The results of logistic regression analysis for safe delivery care are presented in Table-4. Findings show that the wealth index, religion, woman's education, husband's education, full antenatal care and birth order have statistically significant determinants of safe delivery care among child-married mothers in India. The wealth index has emerged as an important determinant of safe delivery. The child-married mothers belonging to the richer and richest quintiles are 2.2 and 2.9 times respectively more likely to have a safe delivery compared to those belonging to the poorest wealth quintile. The likelihood of safe delivery care utilization increases with the level of the mother's education. The mother with secondary and higher secondary education (OR=1.800, OR=2.349) are more likely to have a safe–delivery care utilization than mother with illiterate or no education. Similarly, the odds of having a safe delivery increases with the level of husband's education. Moreover, the likelihood of safe delivery is lower among Muslim mothers (OR = 0.855) compared to Hindu mothers. The odds of safe delivery among mothers of parity 'two and above' are lower than mothers with parity one (OR = 0.609).The child married mothers who have received full antenatal care during their pregnancy are almost three times more likely to have safe delivery care (OR = 2.923).

5.3 Determinants of post-natal care among child married mothers

Table 4 represents that wealth index, mother's education; full antenatal care and safe delivery care are significant factors to be associated with utilization of postnatal care among child-married mother in India. The likelihood of utilizing postnatal care is nearly two times higher (OR = 2.248) among mothers from the richest wealth quintile than among those belonging to the poorest wealth quintile. The odds of mothers with secondary (OR=1.490) and higher secondary education (OR=1.866) receiving postnatal care are higher than illiterate mothers are. Muslim mothers are about one and half times more likely to receive postnatal care than their Hindu counterparts are (OR=1.645).

6. Discussion

Maternal health care has been at the top of the agenda of the Government of India since 1996 when the integration of the Safe Motherhood and Child Health Program into the Reproductive and Child Health Program (RCH) took place. The present study focus on the incidence of maternity health care facility among child married mothers in India. Here, we have seen the low utilization of full antenatal care and moderate level of safe delivery and postnatal care among child-married mother. The demographic and socio-economic characteristics of women such as education, employment status, caste, religion and wealth of residence are significant factor to be associated with maternal health care among child-married mothers in India. In this study, we find the mothers with richer households are more likely to use maternal care compared to mothers from the poorest households. Because, mothers from richer households are generally more educated and have more autonomy power to meet the expenses on healthcare facility compared to mothers from poorer households. Moreover, the social group as a predictor variable in case of safe delivery and postnatal care, it does not turn out to be statistically significant, it does emerge as a significant predictor of full antenatal care. In our study, SC mothers are more likely to receive full antenatal care compared to ST mothers. The reason is that the ST mothers are socio-economically under privileged than the mothers from other social group. In our study, we find that Muslim child married mothers are less likely to use full-antenatal and safe delivery care compared to their Hindu counterparts. The Sachar Committee of the Government of India suggest that the Muslim community is deprived in all dimensions of development, such as social, educational and economic status than the Hindu counterpart. It is however surprising to see that Muslim child

married mothers is more likely to use the postnatal care than their Hindu counterparts are. This finding is in contrast with most of the previous studies (Singh, Rai, Alagarajan & Singh. 2012). The likelihood of using maternal care significantly declines among mothers with two or more children compared to those with only one child. It is because the mothers with two and more children have gained in terms of experience, knowledge and confidence than the mothers with single children. The findings of this study also suggest that the uses of antenatal care have a remarkable effect on the uses of safe delivery care. Similarly, the uses of both antenatal care and safe delivery care have significant effect on the uses of postnatal care. Moreover, mother's employment is insignificant factor to be associated with maternal health care utilization among child-married mother. In our study, we find that there is an association between higher education among women and maternal health care utilization among child-married mother in India. Because, the education of the mother is argued to be an effective means of achieving greater autonomy in the family. Moreover, the employment of the women creates economic independence among them. The education also provides her opportunities to learn about pregnancy and childbirth through exposure to mass media (Acharya, Bell, Simkhada, Teijlingen and Regmi. 2010). Moreover, education makes mothers confident, brings a feeling of self-worth, and enhances communication with their husbands and other family members on different issues including her own health (Chakraborty, Islam, Chowdhury and Bari. 2002). It has been observed that the child married mothers who have seen/heard/read the messages related to maternity care through mass media or interpersonal communication are more likely to utilize maternity services compared to those who have not. Moreover, the level of the husband's education in this study also emerges as a significant predictor in full antenatal and safe delivery care among child-married mother. One of the reasons, the educated husband's are more conscious about his wife's health.

7. Conclusion and Policy Implication

The present study show the utilization of maternal health care services among child married mothers in India using DLHS-4 unit level data. The study reveals that the demographic and socio-economic characteristics can influence the uses of maternal health care service among child-married mothers in India. Our study also shows that the likelihood of having a safe delivery and postnatal check-up is higher among those mothers who had full antenatal care during pregnancy. This finding calls for urgent action to increase its coverage among child-married mothers. To ensure the coverage of full antenatal care can reduce the maternal mortality among child-married mothers in India. In this study, we find, the mass media messages and interpersonal communication have a significant impact on the maternal health care utilization among the child-married mothers. Thus, government should focus on promotion of maternal care services through mass media and interpersonal communication at the grass-root level through community health workers such as ASHA (Accredited Social Health Activist) and Anganwadi workers. The education of a woman and her partner are also a highly influential factor for utilization the maternal healthcare service among child-married mothers. We find that a mother who has completed five to eight years of schooling can improve the likelihood of healthcare utilization by about 30%–95%. Therefore, Government has to take the educational reforms, providing financial incentives, promoting distance education and improving educational infrastructure at school and university levels, which can help the current generation as well as future generations of the child-married mothers. Similarly, the education among male partners should also be encouraged, as it is the males who generally have an upper hand in decision-making at household level in Indian society. Their education may lead to their greater involvement in maternal care (Chattopadhyay, 2012). Moreover, the low age at marriage is one of the reasons for barrier in women education. Hence, the government should actively work towards increase the age at marriage and to provide more educational opportunities among the adolescents' girls. Thus, government should ensure proper implementation of the Prohibition of Child Marriage Act, 2006 to stop child marriages in the country. The low contraceptive uses and low age at marriage are the two crucial reasons behind the high parity among child-married mother. There is a need to spread awareness about the benefits of contraceptive use and higher age at marriage not only through mass media but about also active involvement of the community as a whole.

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